

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A method for performing a concurrent automated ~~LIC~~ Licensed Internal Code update on a storage controller, comprising the steps of:

providing a storage controller comprising a first cluster and a second cluster, wherein said first cluster comprises a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive, and wherein said second cluster comprises a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

copying a Licensed Internal Code update to said first cluster installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first cluster backup drive but not on said first cluster primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but not on said second cluster primary boot drive;

~~(A.) installing LIC update software on a first cluster and a second cluster;~~

~~(B.) continuing operation of said storage controller with at least one of said first cluster and said second cluster while updating a first cluster firmware on said first cluster and updating a second cluster firmware on said second cluster;~~

~~(C.) verifying said first cluster firmware on said first cluster; and~~

~~(D.) verifying said second cluster firmware on said second cluster.~~

2. (currently amended) The method of claim 1, wherein ~~step B~~ said continuing operation step further comprises the steps of:

- (A-) quiescing said second cluster;
- (B-) transferring operation control of said storage controller to said first cluster;
- (C-) rebooting said second cluster using said second cluster backup drive;
- (D-) ~~updating said second cluster firmware on said second cluster~~;
- (E-) ~~rebooting said second cluster~~;
- (F-) transferring operation control of said storage controller to said second cluster;
- (G-) quiescing said first cluster;
- (H-) rebooting said first cluster using said first cluster backup drive;
- (I-) ~~updating said first cluster firmware on said first cluster~~;
- (J-) ~~rebooting said first cluster~~; and
- (K-) transferring operation control of said storage controller to said first cluster and said second cluster.

3. Canceled.

4. (currently amended) The method of claim 1, further comprising the steps of:

- (A-) running an automated ~~LIC~~ Licensed Internal Code dispatcher process that calls state actions from a state action table, wherein said state action table comprises a plurality of individual state actions to perform said concurrent automated ~~LIC~~ Licensed Internal Code update.

5. (currently amended) A method for performing a nonconcurrent automated ~~LIC~~ Licensed Internal Code update on a storage controller, comprising the steps of:

providing a storage controller comprising a first cluster and a second cluster, wherein said first cluster comprises a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive, and wherein said second cluster comprises a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

copying a Licensed Internal Code update to said first cluster installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first cluster backup drive but not on said first cluster primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but not on said second cluster primary boot drive;

~~(A.) installing Licensed Internal Code update software on a first cluster and a second cluster;~~

~~(B.) suspending operation of said storage controller;~~

~~(C.) quiescing said first cluster;~~

~~(D.) quiescing said second cluster;~~

~~(E.) rebooting said first cluster using said first cluster backup drive;~~

~~(F.) rebooting said second cluster using said second cluster backup drive;~~

~~(G.) transferring LIC update process control of said storage controller to said first cluster;~~

~~(H.) updating a first cluster firmware on said first cluster;~~

~~(I.) updating a second cluster firmware on said second cluster;~~

~~(J.) rebooting said first cluster;~~

~~(K.) rebooting said second cluster; and~~

~~(L.) transferring operation control of said storage controller to said first cluster and said second cluster.~~

6. (currently amended) The method of claim 5, further comprising the steps of:

~~(A.)~~ verifying said first cluster firmware on said first cluster; and

~~(B.)~~ verifying said second cluster firmware on said second cluster.

7. Canceled.

8. (currently amended) The method of claim 5, further comprising the steps of:

~~(A.)~~ running an automated ~~LIC~~ Licensed Internal Code dispatcher process that calls state actions from a state action table, wherein said state action table comprises a plurality of individual state actions to perform said nonconcurrent automated ~~LIC~~ Licensed Internal Code update.

9. (currently amended) A computing system for capable of automatically updating ~~LIC~~ Licensed Internal Code on a storage controller ~~disposed therein, wherein said storage controller comprises comprising:~~

a first cluster comprising a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive;

a second cluster comprising a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

a communication line between said first cluster and said second cluster;

a state action table, wherein said state action table comprises a plurality of individual state actions for a concurrent automated ~~LIC~~ Licensed Internal Code update;

an automated ~~LIC~~ Licensed Internal Code dispatcher executing said state actions from said state action table to perform method steps comprising:

copying a Licensed Internal Code update to said first cluster installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first cluster backup drive but not on said first cluster primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but not on said second cluster primary boot drive;

~~(A.) installing LIC update software on said first cluster and said second cluster;~~

~~(B.)~~ continuing operation of said storage controller with at least one of said first cluster and said second cluster while updating a first cluster firmware on said first cluster and updating a second cluster firmware on said second cluster;

~~(C.)~~ verifying said first cluster firmware on said first cluster; and

~~(D.)~~ verifying said second cluster firmware on said second cluster.

10. (currently amended) The computing system of claim 9, wherein ~~step B~~ said continuing operation step further comprises the steps of:

~~(A.)~~ quiescing said second cluster;

~~(B.)~~ transferring operation control of said storage controller to said first cluster;

~~(C.)~~ rebooting said second cluster using said second cluster backup drive;

~~(D.)~~ updating said second cluster firmware on said second cluster;

~~(E.)~~ rebooting said second cluster;

~~(F.)~~ transferring operation control of said storage controller to said second cluster;

~~(G.)~~ quiescing said first cluster;
~~(H.)~~ rebooting said first cluster using said first cluster backup drive;
~~(I.)~~ updating said first cluster firmware on said first cluster;
~~(J.)~~ rebooting said first cluster; and
~~(K.)~~ transferring operation control of said storage controller to said first cluster and said second cluster.

11. Canceled.

12. (currently amended) A computing system for automatically updating ~~LIC~~ Licensed Internal Code on a storage controller disposed therein, wherein said storage controller comprises comprising:

a first cluster comprising a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive;

a second cluster comprising a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

a communication line between said first cluster and said second cluster;

a state action table, wherein said state action table comprises a plurality of individual state actions for a nonconcurrent automated ~~LIC~~ Licensed Internal Code update;

an automated ~~LIC~~ Licensed Internal Code dispatcher executing state actions from said state action table to perform method steps comprising:

copying a Licensed Internal Code update to said first installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first backup drive but not on said

first primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but
not on said second cluster primary boot drive;

~~(A.) installing LIC update software on said first cluster and said second cluster;~~

~~(B.) suspending operation of said storage controller;~~

~~(C.) quiescing said first cluster;~~

~~(D.) quiescing said second cluster;~~

~~(E.) rebooting said first cluster using said first cluster backup drive;~~

~~(F.) rebooting said second cluster using said second cluster backup drive;~~

~~(G.) transferring LIC update process control of said storage controller to said first~~

~~cluster;~~

~~(H.) updating a first cluster firmware on said first cluster;~~

~~(I.) updating a second cluster firmware on said second cluster;~~

~~(J.) rebooting said first cluster;~~

~~(K.) rebooting said second cluster; and~~

~~(L.) transferring operation control of said storage controller to said first cluster and said~~
~~second cluster.~~

13. (currently amended) The computing system of claim 12, wherein said method steps
further comprise the steps of:

~~(A.) verifying said first cluster firmware on said first cluster; and~~

~~(B.) verifying said second cluster firmware on said second cluster.~~

14. Canceled.

15. (currently amended) An article of manufacture comprising a data storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform method steps for automatically updating ~~LIC~~ Licensed Internal Code on a storage controller, said storage controller comprising:

a first cluster comprising a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive;

a second cluster comprising a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

a communication line between said first cluster and said second cluster,

a state action table, wherein said state action table comprises a plurality of individual state actions for a concurrent automated ~~LIC~~ Licensed Internal Code update and an automated ~~LIC~~ Licensed Internal Code dispatcher executing said state actions from said state action table, said method steps comprising:

copying a Licensed Internal Code update to said first cluster installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first cluster backup drive but not on said first cluster primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but not on said second cluster primary boot drive;

~~(A.) installing LIC update software on said first cluster and said second cluster;~~

~~(B.) continuing operation of said storage controller with at least one of said first cluster and said second cluster while updating a first cluster firmware on said first cluster and updating~~

a second cluster firmware on said second cluster;

~~(C.)~~ verifying said first cluster firmware on said first cluster; and

~~(D.)~~ verifying said second cluster firmware on said second cluster.

16. (currently amended) The article of manufacture of claim 15, wherein ~~step B~~ said continuing operation step further comprises the steps of:

~~(A.)~~ quiescing said second cluster;

~~(B.)~~ transferring operation control of said storage controller to said first cluster;

~~(C.)~~ rebooting said second cluster using said second cluster backup drive;

~~(D.)~~ ~~updating said second cluster firmware on said second cluster~~;

~~(E.)~~ ~~rebooting said second cluster~~;

~~(F.)~~ transferring operation control of said storage controller to said second cluster;

~~(G.)~~ quiescing said first cluster;

~~(H.)~~ rebooting said first cluster using said first cluster backup drive;

~~(I.)~~ ~~updating said first cluster firmware on said first cluster~~;

~~(J.)~~ ~~rebooting said first cluster~~; and

~~(K.)~~ transferring operation control of said storage controller to said first cluster and said second cluster.

17. Canceled.

18. (currently amended) An article of manufacture comprising a data storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform method steps for automatically updating ~~HC~~ Licensed Internal Code on a storage controller, said storage controller comprising:

a first cluster comprising a first cluster installation directory, a first cluster primary boot drive and a first cluster backup drive;

a second cluster comprising a second cluster installation directory, a second cluster primary boot drive and a second cluster backup drive;

a communication line between said first cluster and said second cluster,

a state action table, wherein said state action table comprises a plurality of individual state actions for a nonconcurrent automated ~~LIC~~ Licensed Internal Code update; and

an automated ~~LIC~~ Licensed Internal Code dispatcher executing said state actions from said state action table, said method steps comprising:

copying a Licensed Internal Code update to said first cluster installation directory and to said second cluster installation directory;

installing said Licensed Internal Code update on said first cluster backup drive but not on said first cluster primary boot drive;

installing said Licensed Internal Code update on said second cluster backup drive but not on said second cluster primary boot drive;

~~(A.) installing LIC update software on said first cluster and said second cluster;~~

~~(B.) suspending operation of said storage controller;~~

~~(C.) quiescing said first cluster;~~

~~(D.) quiescing said second cluster;~~

~~(E.) rebooting said first cluster~~ using said first cluster backup drive;

~~(F.) rebooting said second cluster~~ using said second cluster backup drive;

~~(G.) transferring LIC update process control of said storage controller to said first~~

cluster;

~~(J.) rebooting said first cluster;~~

~~(K.) rebooting said second cluster; and~~

~~(L.) transferring operation control of said storage controller to said first cluster and said second cluster.~~

19. (currently amended) The article of manufacture of claim 18, wherein said method steps further comprise the steps of:

~~(A.)~~ verifying said first cluster firmware on said first cluster; and

~~(B.)~~ verifying said second cluster firmware on said second cluster.

20. Canceled.